**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per:\_\_\_\_\_\_\_\_\_**

**Chapter \_\_\_\_ Section \_\_\_ pp. \_\_\_\_\_\_--\_\_\_\_\_\_\_ Minerals & Rocks—Noteguide**

**MINERALS** have certain characteristics:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ROCKS**

* \_\_\_\_\_\_\_\_\_ rocks are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Rocks are divided into **three** groups based on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:

A) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

B) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

C) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cycle is a sequence of events in which rocks are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, altered and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

A) **Igneous (“\_\_\_\_\_\_\_” rocks)** formed from cooled/hardened \_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

* \_\_\_\_trusive igneous rock: \_\_\_\_\_\_\_\_ ground🡪cools \_\_\_\_\_\_\_\_\_--> \_\_\_\_\_\_\_\_\_ & \_\_\_\_\_\_\_\_\_ crystals
  + Cools very \_\_\_\_\_\_\_\_\_\_ so crystals don’t have much time to form (few and small).
    - List 2 examples: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_trusive igneous rock: \_\_\_\_\_\_\_\_ ground🡪cools \_\_\_\_\_\_\_\_\_--> \_\_\_\_\_\_\_\_\_ & \_\_\_\_\_\_\_\_\_ crystals
  + Cools very \_\_\_\_\_\_\_\_\_\_ so crystals have a large amount of time to form (more and larger).
    - List 2 examples: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

B) **Sedimentary** rocks are formed by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ deposits of

sediment.

* **Sedimentary** rocks contain the remains of living organisms (plant or animal) called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* **Sedimentary** rocks contain fragments of older rocks from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_--the process by which rocks are broken down from wind, rain or ice when rocks are exposed at the Earth's surface.
* Rivers carry \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ over the Earth's surface and are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into lakes, and oceans.
* **Sedimentary** rocks are named by the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the fragments they contain.
  + List 2 examples: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

C) **Metamorphic** rocks form in two ways:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (or \_\_\_\_\_\_\_\_\_\_\_ ) deep in the Earth.

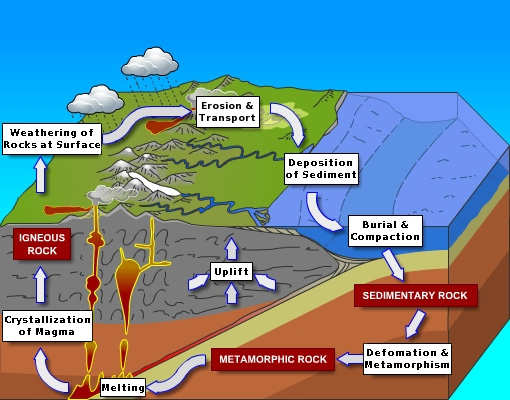
**How Old Are Rocks?**

**Superposition**: helps determine the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_age of rocks. (think of: trash compacter or laundry

chute)

* The **principle of superposition** states that assuming there is no change in the position of rock layers, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ rock will be on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ will be on top.

**Radioactive Dating**: gives the absolute (more exact) age of rocks.

* As the nuclei of some isotopes decay, the isotopes become \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and they emit \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* The radioactive elements that make up minerals in rocks decay at different rates🡪 rates help \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.